tered a westerly gale of force 8, lowest pressure 29.53 inches, near 14½° N., 105½° W.

In the second instance the American motorboat *St. Therese*, while north of Cape Corrientes on the 18th, experienced a southeast wind of force 7. Mr. Eichler, the observing officer on board, made the following informational comment:

> July 18. Had reports from M.S. *San Lucas*, M.S. *Atlantic*, and M.S. *San Salvador*, in vicinity of the Revillagigedo Islands, that wind of hurricane velocity was blowing, accompanied by fog and rain, with an occasional shift of wind.

Fog.—Following upon the unusual and almost complete absence of fog from our west coast waters in June, there was a heavy recurrence of it along the Peninsula of California in July, where it was observed on 10 days. Between San Diego and San Francisco it was experienced on 5 days. The occurrence of fog on the northern steamer routes this month was the maximum thus far this year for that region. Along most of the Great Circle route between the 140th meridian of west longitude and Japan it was observed on 10 percent to 30 percent or more of the days, with the area of greatest frequency south of the Aleutian Islands. One casualty due to dense fog was the sinking of the seiner *Umatilla* by the U.S.S. *Arizona* off Tatoosh Light on July 26. Of nine men aboard the seiner, two were lost as a result of the accident.

TYPHOON AND DEPRESSIONS IN THE FAR EAST JULY 1934

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During the month of July 1934, 1 typhoon and 4 depressions influenced the weather conditions of the Far East.

The typhoon appeared on the weather map July 15, 6 a.m., near longitude 129° E., latitude 21° N.; observations from S.S. *Manoeran* and S.S. *Tuscalusa* indicated its existence. It moved northwest, changing to west-northwest July 16 and approaching Formosa; July 19, 6 a.m., found the typhoon located over northern Formosa. It then changed its course to the northwest, crossed the Formosa Channel, and entered China, gradually recurving to the north-northeast, and leaving China about 100 miles north of Shanghai. After crossing the Yellow Sea and Korea (July 23), it filled up in the Sea of Japan.

On July 14, a definite southwest current of air began to move over the Philippines, continuing until the typhoon entered China (July 21). Very little precipitation was connected with this southwest air at first. On the evening of July 16, however, heavy precipitation began over the northern part of the Archipelago. At Manila, this was preceded by thunder and lightning to the northwest. For 3 days these heavy rains continued, causing considerable damage to crops and roads. The Ilocos Express of the Manila Railroad Co. was derailed at a washout along the tracks. Baguio was isolated for about 2 days, due to landslides along the mountain roads leading to the city. Four deaths due to drowning in swollen rivers were reported later in the month. Such, in brief, was the damage caused by a typhoon about 500 miles north-northeast of Manila.

There is good evidence that a northerly current of air existed aloft while these heavy rains prevailed. Surface data from stations along the Formosa Channel on the afternoon of July 16, as well as upper air data given by Hong Kong, show the beginning of this northerly current of air, which continued for the next few days. It seems that interaction between the southwest current of air at the surface and the northerly air aloft caused the heavy precipitation; it is certain that the heavy rains prevailed while Hong Kong had these northerly currents. It is difficult to determine the origin of this air. Surface data from the few interior stations of China show northerly winds; yet it is possible that these upper currents traveled around the periphery of the typhoon and had their origin over southern maritime regions.

On the afternoon of July 19, a front existed in the Formosa Channel. The typhoon was about 100 miles to the east at the time, while the S.S. *Empress of Japan* and the S.S. *Pres. Van Buren* passed from a region of north and north-northeast winds to west-southwest and southwest winds, accompanied by lightning and thunder. The S.S. *Tjisdane* anchored at Beal Harbor (longitude 122°20′ E., latitude 30°29′ N.) from July 20, midnight, until 7 p.m. July 21; during this period the typhoon passed about 150 miles to the west. Winds were mainly from the southeast, force 7 the highest velocity, and 748.4 millimeters (not corrected for gravity) the lowest pressure, recorded (6 p.m. July 20 and 4 a.m. July 21). There were no discontinuities in wind direction at this location as the typhoon passed to the west.

A weak depression, small in area, formed in the Pacific the night of June 30. The next morning, its center was near longitude 123° E., latitude 15° N., from which position it moved westward, crossing Luzon a short distance north of Manila and then slowly moving across the China Sea into Indo China.

A low-pressure area was located July 6 near longitude 131° E., latitude 15° N. It moved northwest, at first rapidly, and then slowly, recurving July 10 and 11 to the northeast near longitude 125° E., latitude 19° N. July 12 found it located at longitude 131° E., latitude 24° N., after which it changed its course more to the north; July 15 was the last day it appeared on the weather map (longitude 136° E., latitude 27° N.).

On July 10, 6 a.m., a depression appeared in the Balingtang Channel, (longitude 120° E., latitude 20° N.) and moved northwest, recurving to the northeast July 12 and 13 south of Macao; it then traveled for 2 days, changing its direction to the east on July 14, and to the north on the 15th near longitude 130° E., latitude 25° N.

On July 29, a depression appeared on the weather map, located northwest of the Island of Hainan. It moved into Indo China the next day, direction northwest.